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A New Species of *Lobulogobius* (Teleostei: Gobiidae) from the Arafura Sea

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Abstract A new species of commensal goby, *Lobulogobius morrigu*, from the Arafura Sea, is described. It differs from the other known species, *L. omanensis*, in the compressed head and body, sculpturing on the angle of the preopercle and in lacking nape scales. *L. omanensis* is recorded from Australia for the first time.

The genus *Lobulogobius* belongs to a closely-related group of commensal gobies. *Lobulogobius* resembles *Pleurosicya* and *Tenacigobius* in pelvic fin form but differs in having all the pectoral rays branched, an unrestricted gill opening and a very wide interorbital without an anterior median interorbital pore. Previously only one species, *L. omanensis* Koumans in Blegvad and Lφppenthin, 1944, was known (Larson and Hoese, 1980). Two specimens representing a second species have been collected from the Arafura Sea.

Methods

Counts and measurements follow those given by Hubbs and Lagler (1958) except as indicated below. Head length is measured to the upper attachment of the opercular membrane. The last ray of the second dorsal and anal fins is branched to the base, and counted as one ray. The longitudinal scale count is taken from the end of the hypural forward to the upper attachment of the opercular membrane. Transverse scale count is taken from the anal fin origin upward and backward to the second dorsal fin base. Measurements were made using a dissecting microscope with an ocular micrometer and needlepoint dividers.

Lobulogobius morrigu sp. nov.

(Fig. 1)

Holotype. AMS (The Australian Museum, Sydney) I.19290-003, 31.0 mm in standard length (SL), male, Arafura Sea, 10°26′S, 136°25.8′E, 58 m depth, sand substrate, RV "Alpha Helix", 17 March 1975.

Paratype. AMS I.21957-001, 20.5 mm SL, male, Arafura Sea, 11°47′S, 136°16′E, 28 m depth, RV "Soela", 22 November 1980, from *Solenocaulon* sp.

Diagnosis. A small goby with compressed head and body, and rather small eyes and sculpturing on the angle of the preopercle. Pelvic fins fused to form rounded cup and frenum folded forming an anteriorly-facing pocket. Head and nape scaleless. Eyes set laterally and high on head. Interorbital wide, about twice eye diameter. Mouth anterior and oblique, with several rows of curved pointed teeth. Tongue blunt or slightly bilobed. Gill opening wide, gill membranes free of isthmus and each other until they meet at isthmus at a point below eye. Unpaired fins low. Pectoral rays 19, branched in adults.

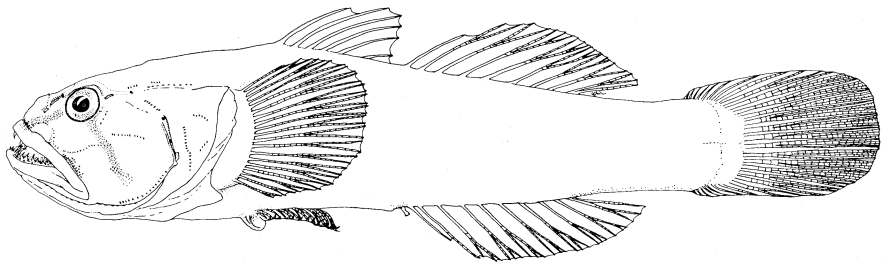

Fig. 1. Holotype of *Lobulogobius morrigu* sp. nov. (AMS I. 19290-003), 31.0 mm SL, male.

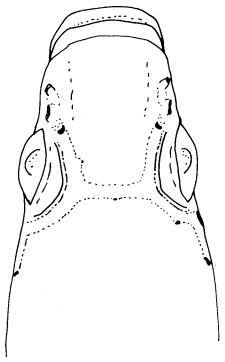

Fig. 2. Headpore pattern of *Lobulogobius morrigu* sp. nov., holotype.

Table 1. Counts and measurements (in mm) of *Lobulogobius morrigu* sp. nov.

	Holotype AMS I.19290–003 ♂	Paratype AMS I.21957–001 ♂
SL	31.0	20.5
First dorsal fin rays	VI	VI
Second dorsal fin rays	I, 8	I, 8
Anal fin rays	I, 9	I, 9
Pectoral fin rays	19	19
Lateral-line scales	32	25?
Transverse scales backward	10	9?
Head length	10.8	7.0
Head width	5.7	3.8
Head depth	6.7	5.0
Body depth at anus	6.2	4.7
Caudal peduncle length	6.0	3.6
Caudal peduncle depth	3.8	2.4
Caudal length	6.7	4.1
Pectoral length	5.3	4.0
Pelvic length	4.7	3.4
Snout length	2.8	2.0
Eye diameter	1.8	1.1
Upper jaw length	5.5	3.8
Interorbital width	2.3	2.0

Description. First dorsal VI. Second dorsal I, 8. Anal I, 9. Pectoral rays 19, all rays branched in holotype. In paratype, lowermost ray on right side, and lowermost two rays on left side unbranched. Segmented caudal rays 17. Branched caudal rays 14 in holotype (rays in paratype broken). In holotype, longitudinal scale count 32 and transverse scale count backward 10. Paratype abraded, 9? transverse scales and longitudinal scale count 25? Gill rakers short and stubby, 2+1+8 in paratype. Anterior end of first gill arch barely bound to opercular wall. Tongue blunt in holotype, slightly bilobed in paratype. Lateral line canals of head similar to those in *L. omanensis* (Fig. 2). Postocular pores minute, only right-hand pore visible in holotype. Median posterior interorbital pore very small in both specimens. Three preopercular pores present, lowermost partly hidden by bony edge of preopercle. Sensory papillae on head as in Fig. 3. Head and pectoral base naked, body scales reach to below second

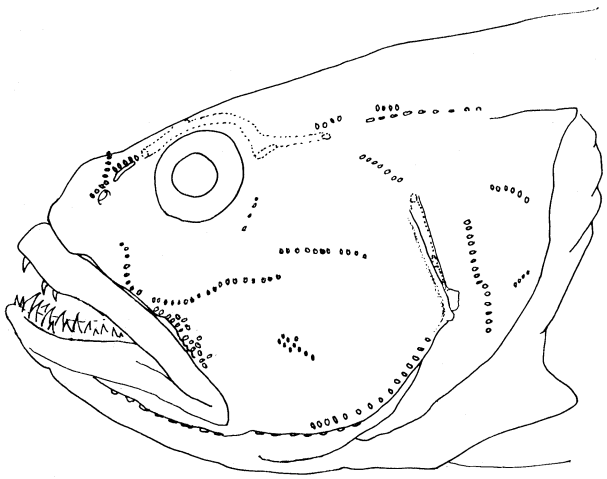

Fig. 3. Sensory papillae of *Lobulogobius morrigu* sp. nov. (lateral line canals stippled).

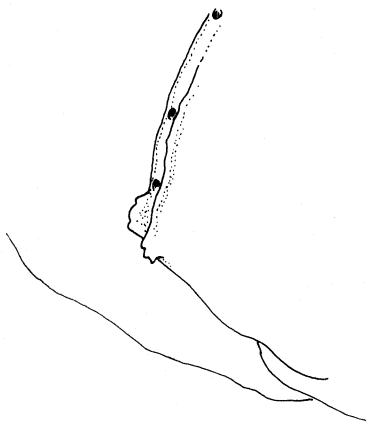

Fig. 4. Sculpturing on the angle of the preopercle of *Lobulogobius morrigu* sp. nov. (right side).

dorsal spine and to just above pectoral base. Sides of belly scaled in holotype, paratype abraded, unable to tell if belly had been scaled. Table 1 gives body measurements.

Body moderately slender, quite compressed, body width at anus about twice in depth at anus. Body depth at anus 22% of SL. Head compressed, length about 3 in SL. Head depth greater than head width. Eye small, about 6 in head. Supraorbital ridge present, probably somewhat exaggerated by preservation. Mouth large, oblique, reaching to below posterior part of eye. Posterior edge of preopercle anterior to preopercular lateral canal hard, turned slightly outward to form low slightly irregular ridge, with one to three blunt teeth at ventral point of ridge. (In holotype, one tooth on left side, three on right, see Fig. 4). At preopercular angle, on posterior side of preopercular lateral canal, a small roughly square flange of bone (Figs. 1～2). Width of bone flange somewhat greater than half pupil diameter. Interorbital broad, about twice eye diameter. Snout convex, with a knob formed by ascending premaxillary process (may be enhanced by preservation). Posterior nostril slit-like, slightly raised; anterior nostril in short tube.

First dorsal fin low, spines not reaching beyond second dorsal fin origin. Second dorsal and anal fins short, somewhat pointed posteriorly, rays not reaching caudal fin base. Caudal roughly rectangular, approximately 1.5 in head length. Pectoral rounded, short, barely reaching to below second dorsal fin origin. Pelvics short and cuplike, pelvic spines curved in toward each other. Lobes around pelvic spines fleshy, frenum finely papillose in holotype. Pelvic fins reach about halfway to anus.

Teeth sharp, pointed, in several rows in both jaws. Upper jaw with outermost row consisting of large curved teeth evenly spaced, largest teeth toward anterior half of jaw. Behind these a band of 3～4 rows of small pointed teeth; band thickest anteriorly. Lower jaw with a band of sharp small teeth, teeth enlarged at anterior tip of jaw. Behind this band are two pairs of large canines, one on either side of dentary symphysis. A row of medium-sized canines is innermost.

Both specimens are male, with a small slender genital papilla, the tip slightly expanded.

Nothing is left of the colour pattern of either specimen. John Paxton (pers. comm.) noted colour of paratype two hours after preservation in formalin. The eye lens was bright blue surrounded by a thin yellow line with orange spots around the line's outer edge. Rest of iris golden-orange. A faint orange blotch present on dorsal edge of eye. Small dark orange chromatophores scattered across top of head. A faint orange bar from front of eye to upper jaw, and a more distinct orange bar from posterior edge of eye across cheek, slanting slightly backward. Head and body whitish, with tips of first dorsal spines faint orange (most of fin membranes broken).

Ecology. The species is commensal in habit. The holotype was from a sponge (discarded) and the paratype from a large brown-black *Solenocaulon* (deposited at AMS), a hollow branching gorgonian. Several specimens of *Lubricogobius ornatus* were found among other colonies of the same species of *Solenocaulon*. The *Lubricogobius* are yellow with several narrow stripes on the head, and are superficially very similar to *Lobulogobius morrigu*. The paratype had a nematode (*Thynnascaris* sp.) under the skin on the left side of the body.

Derivation of name. "Morrigu": the old Irish war goddess, in reference to the jaws and dentition.

Discussion

Lobulogobius morrigu differs from *L. omanensis* by having the nape naked, the head compressed,

instead of broad and somewhat depressed, and in the sculpturing on the angle of the preopercle. Both species are rarely collected. As they are commensal in sponges and gorgonians, they are probably often overlooked among the "trash" brought up by trawlers. The fifth known specimen of *L. omanensis* was collected west of Broome, W. A., from 72 m depth, by the CSIRO vessel 'Soela' on November 5, 1980. This is the first record of the species for Australia.

Acknowledgments

Thanks are due to John Paxton for finding the holotype, and to Dianne Bray for patiently tearing apart many *Solenocaulon* to find the paratype. John Hooper kindly identified the nematode. John Gunn photographed the paratype (this aided the colour description).

Literature cited

Blegvad, H. and B. Løppenthin. 1944. Fishes of the Iranian Gulf. Danish Scientific Investigations in Iran. Part 3: 1～247, pls. 1～11.

Hubbs, C. L. and K. F. Lagler. 1958. Fishes of the Great Lakes region. Bull. Cranbrook Inst. Sci., 26: 1～213.

Larson, H. K. and D. F. Hoese. 1980. Fishes of the Indian Ocean. Results of the ichthyological investigations during the Indian Ocean expedition of the research vessel "Meteor", October 1964 to May, 1965. Systematical Section, XXIII. "Meteor" Forsch.-Ergebnisse, 32: 33～43.

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アラフラ海から採集されたハゼ科魚類の1新種 *Lobulogobius morrigu*

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アラフラ海から採集された共生ハゼの1種を新種 *Lobulogobius morrigu* として記載する．本種は他の既知種 *L. omanensis* と側偏した頭と体，前鰓蓋骨の角にある歯状突起，無鱗の項部によって区別される．*L. omanensis* はオーストラリアから初めて記録された．